

# Work Order ID-56734

March 5, 2010 9:59:52 AM

Page 1

Item ID: D3391-015

Accept

Setup Start

Revision ID:

Stop

Item Name: Aft Tube Assembly

Start Date: 05/03/2010 Start Qty: 1.00

Cust Item ID:

Required Date: 17/03/2010 Req'd Qty: 1.00

Customer:

Reference:

Run Start

Approvals: Process Plan: PL Date: 10-3-05 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
----------	--------------

D3391	Rev H
-------	-------

100 0.00

MORI SEIKI CNC LATHE LARGE

Mori Seiki Memo 0.00

Mori Seiki CNC Lathe Large Turn as per Folio FA599 Rev: AA & Dwg D3391 Rev: H

110 0.00

QC2- Inspect parts off machine FAI/FAIB

QC Memo 0.00

Quality Control

120 0.00

HAAS CNC VERTICAL MACHINING #1

HAAS 1 Memo 0.00

HAAS CNC vertical machine #1 1-Machine as per Folio FA 599 Rev: 44 & Dwg D3391 Rev: H  
2-Deburr

~~PROBATIVE REPAIR~~  
~~EFFECTIVE 10-3-05~~  
~~RE~~  
AUTH  
DATE

Q.N 10-03-23

Q.N 10-03-23

Q.N 10/03/29

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector	
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

**NOTE:** Date & initial all entries

**Work Order ID 56734**

March 5, 2010 9:59:52 AM

Page 2

Item ID: D3391-015

Accept

Revision ID:

Item Name: Aft Tube Assembly

Start Date: 05/03/2010 Start Qty: 1.00

Required Date: 17/03/2010 Req'd Qty: 1.00

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

130

QC2- Inspect parts off machine FAI/FAIB

0.00

0.00

gmh 10/03/29

QC

Memo

Quality Control

140

QC8- Inspect parts - second check

0.00

0.00

LF 10/03/31

QC

Memo

Quality Control

150

Skidtubes

0.00

0.00

Skidtubes

Memo

Skidtubes

1-Drill ( PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector	
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

**NOTE:** Date & initial all entries

**Work Order ID 56734**

March 5, 2010 9:59:52 AM

Page 3

Item ID: D3391-015

Accept

Setup Start

Revision ID:

Stop

Item Name: Aft Tube Assembly

Start Date: 05/03/2010 Start Qty: 1.00

Cust Item ID:

Required Date: 17/03/2010 Req'd Qty: 1.00

Customer:

Reference:

Run Start

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

160



CNC Bend 1

CNC Delta 100 Bender

BENDING MACHINE - SKIDTUBES

Memo

Form as per Dwg D3391

0.00

0.00

1 11/2/4/28

170



QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

0.00

S 10/04/30

(76)

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 56734**

March 5, 2010 9:59:52 AM



Page 4

Item ID: D3391-015

Accept



Setup Start



Revision ID:

Stop



Item Name: Aft Tube Assembly

Start Date: 05/03/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 17/03/2010 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

180

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill Tube as per D3391 using DT8808 (ALL HOLES)

3-Drill and c'bore wearshoe holes as per Dwg \*\*\*\*\*ensure wall thickness after c'bore is no less than 0.051\*\*\*\*\*

4-C'sink holes for float bag (4 holes per side) as per Dwg D3391  
Deburr

5- Tranfer holes from D3391-013 for electric step in tube

DP10-S-4

190

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8/06/04

Ⓢ

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Work Order ID 56734

March 5, 2010 9:59:52 AM



Item ID: D3391-015

Accept



Revision ID:

Item Name: Aft Tube Assembly

Start Date: 05/03/2010 Start Qty: 1.00

Required Date: 17/03/2010 Req'd Qty: 1.00



Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start  
Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	Chemical Conversion Coat per QSI005 4.1	0.00							
	HandFinish								
Hand Finishing	Memo	0.00							
205	QC3 MB 10-05-05								
210	Skidtubes	0.00							
	Skidtubes								
Skidtubes	Memo	0.00							
	1-Install crossbolt spacers per dwg D3391 A/R Magnabond 6398 batch: M114021								
	2- Grind flush								
220	QC5- Inspect part completeness to step on W/O	0.00							
	QC								
Quality Control	Memo	0.00							

1007.13  
Recladin

1 BK 10-7-13.

DATE  
W/O: \_\_\_\_\_  
Dart Aerospace Ltd

## WORK ORDER CHANGES

DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action -Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 56734

March 5, 2010 9:59:52 AM



Page 6

Item ID: D3391-015

Accept



Setup Start

Revision ID:

Item Name: Aft Tube Assembly

Stop

Start Date: 05/03/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 17/03/2010 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

230



Powdercoat

Powder Coating

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

*M 114841*

Memo

0.00

START TIME: *3:15*  
OVEN TEMPERATURE: *320°*  
FINISH TIME: *3:45*

*1 BR 10-7-13*

240



QC

Quality Control

QC3- Inspect Part Finish

0.00

Memo

0.00

*M 10/07/14*

*1 0*

250



HandFinish

Hand Finishing

HandFinishing

0.00

Memo

0.00

✓1-Install inserts per dwg D3391

✓2-Install Aft Cap as per Dwg D3391

✓A/R Sikaflex-241/-291 *M 113514*  
Sikaflex expiry date: *10/14*

*=7 M 10/07/14*

*1 0*

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 56734

March 5, 2010 9:59:52 AM



Page 7

Item ID: D3391-015

Accept



Setup Start

Revision ID:

Item Name: Aft Tube Assembly

Stop

Start Date: 05/03/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 17/03/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

260

QC5- Inspect part completeness to step on W/O

0.00

8 10/07/15



QC

Memo

0.00

Quality Control

270

Identify as per dwg & Stock Location: \_\_\_\_\_

0.00

10/07/15



Packaging

10 56716

Memo

0.00

Packaging

D412-742-041

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

MP 10-7-15

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

March 5, 2010 9:59:51 AM

Page 167

1/7

Work Order ID: 56734

Parent Item: D3391-015

Parent Item Name: Aft Tube Assembly

Comments: IPP rev A 05.12.13 New issue EC  
IPP rev B 06.02.09 Dwg @ revD EC  
IPP rev C 07.03.13 dwg @revF ec  
IPP rev D 07.10.31 ecn 1053P EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

AN960C10L Purchased No

100

Each

388.0000 10.0000



washer 4 NAS 1149 CO 332R

## Warehouse

## Loc Qty

## Loc Code

### Location

OFFSHORE

FG

100

103585

100

Main Warehouse

ST

288

112116

128

112612

160

D6014-090 Manufactured No

210

Each

7.0000 1.0000



ALUMINUM EXTRUSION

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

LG

7

42768

7

M 115000

41

10/07/14

MB 10-03-17

2x

March 5, 2010 9:59:51 AM

Shop Packet Print

Page 167

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

March 5, 2010 9:59:51 AM

Page 168

2/7

Work Order ID: 56734



Parent Item: D3391-015



Parent Item Name: Aft Tube Assembly

Start Date: 05/03/2010

Required Date: 17/03/2010

Comments: IPP rev A 05.12.13 New issue EC  
IPP rev B 06.02.09 Dwg @ revD EC  
IPP rev C 07.03.13 dwg @revF ec  
IPP rev D 07.10.31 ecn 1053P EC

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-130

Purchased

No

250

Each

1,142.000 14.0000



Insert

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

1142

110511

1142

1114723

x14 y1 10/07/14

ALS4-1032-225

Purchased

No

250

Each

6,116.000 12.0000



Insert

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

6116

107441

16

110768

6100

ALS4-428-165

Purchased

No

250

Each

30.0000 4.0000



Inserts

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

FP

30

6989

30

x4 y1 10/07/14

March 5, 2010 9:59:51 AM

Shop Packet Print

Page 168

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

March 5, 2010 9:59:51 AM

Page 169

3/7

Work Order ID: 56734



Parent Item: D3391-015



Parent Item Name: Aft Tube Assembly

Start Date: 05/03/2010

Required Date: 17/03/2010

Comments: IPP rev A 05.12.13 New issue EC  
 IPP rev B 06.02.09 Dwg @ revD EC  
 IPP rev C 07.03.13 dwg @revF ec  
 IPP rev D 07.10.31 ecn 1053P EC

Start Qty: 1.00

Required Qty: 1.00

AN3C4A

Purchased No

250

Each

1,649.000 6.0000



BOLT



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

1649

1114859

x6

91 10/07/14

112314

13

112720

12

112724

3

112829

1

112991

2

113121

64

113226

344

113644

110

113749

100

114103

500

114108

500

March 5, 2010 9:59:51 AM

Shop Packet Print

Page 169

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

March 5, 2010 9:59:51 AM

Page 170

4/7

Work Order ID: 56734



Parent Item: D3391-015



Parent Item Name: Aft Tube Assembly

Start Date: 05/03/2010

Required Date: 17/03/2010

Comments: IPP rev A 05.12.13 New issue EC  
 IPP rev B 06.02.09 Dwg @ revD EC  
 IPP rev C 07.03.13 dwg @revF ec  
 IPP rev D 07.10.31 ecn 1053P EC

Start Qty: 1.00

Required Qty: 1.00

AN3C5A Purchased No

250 Each

587.0000 4.0000



Bolt



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

587

1115000  
1105015

x4 21 10/07/14

111424

8

111707

69

112314

1

113121

49

113149

160

114056

200

114108

100

D2646 Manufactured No

250 Each

48.0000 1.0000



Aft Cap



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

FP6

29

1357332

x1 21 10/07/14

52663

29

Main Warehouse

fp7

11

52663

11

Main Warehouse

ST

8

46327

4

48109

4

March 5, 2010 9:59:51 AM

Shop Packet Print

Page 170

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

March 5, 2010 9:59:51 AM

Page 171

5/7

Work Order ID: 56734



Parent Item: D3391-015



Parent Item Name: Aft Tube Assembly

Start Date: 05/03/2010

Required Date: 17/03/2010

Comments: IPP rev A 05.12.13 New issue EC  
IPP rev B 06.02.09 Dwg @ revD EC  
IPP rev C 07.03.13 dwg @ revF ec  
IPP rev D 07.10.31 ecn 1053P EC

Start Qty: 1.00

Required Qty: 1.00

D3537-1

Manufactured No

250

Each

85.0000

1.0000



Wearpad

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

FP

74

B59593

x1 24 10/07/14

48288

2

55465

72

Main Warehouse

FP17

11

51678

1

51679

10

D3537-7

Manufactured No

250

Each

14.0000

1.0000



Wearpad

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

14

45408

3

46346

11

x1 24 10/07/14

March 5, 2010 9:59:51 AM

Shop Packet Print

Page 171

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

March 5, 2010 9:59:51 AM

Page 172

6/7

Work Order ID: 56734

Parent Item: D3391-015

Parent Item Name: Aft Tube Assembly

Comments: IPP rev A 05.12.13 New issue EC  
 IPP rev B 06.02.09 Dwg @ revD EC  
 IPP rev C 07.03.13 dwg @ revF ec  
 IPP rev D 07.10.31 ecn 1053P EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

D3553-1 Manufactured No



Gasket

250 Each 9.0000 1.0000



Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

9

53868

9

D3553-3 Manufactured No



Gasket

250 Each 58.0000 1.0000



Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP

58

58

53480

D3670-4-200 Manufactured No



SPACER

250 Each 63.0000 14.0000



Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

63

48198

4

48269

59

1356801

14

11/2/15

Shop Packet Print

Page 172

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

March 5, 2010 9:59:51 AM

Page 173

Work Order ID: 56734

Parent Item: D3391-015

Parent Item Name: Aft Tube Assembly

Comments: IPP rev A 05.12.13 New issue EC  
 IPP rev B 06.02.09 Dwg @ revD EC  
 IPP rev C 07.03.13 dwg @revF ec  
 IPP rev D 07.10.31 ecn 1053P EC

Start Date: 05/03/2010

Required Date: 17/03/2010

Start Qty: 1.00

Required Qty: 1.00

D3672-1

Manufactured No

250

Each

1,618.000 2.0000



Phenolic Washer

## Warehouse

### Location

Main Warehouse

ST

1118

39275

19

42329

5

47628

94

52505

1000

Main Warehouse

ST117

500

1674

500

## Loc Code

x2 10107114

March 5, 2010 9:59:51 AM

Shop Packet Print

Page 173

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

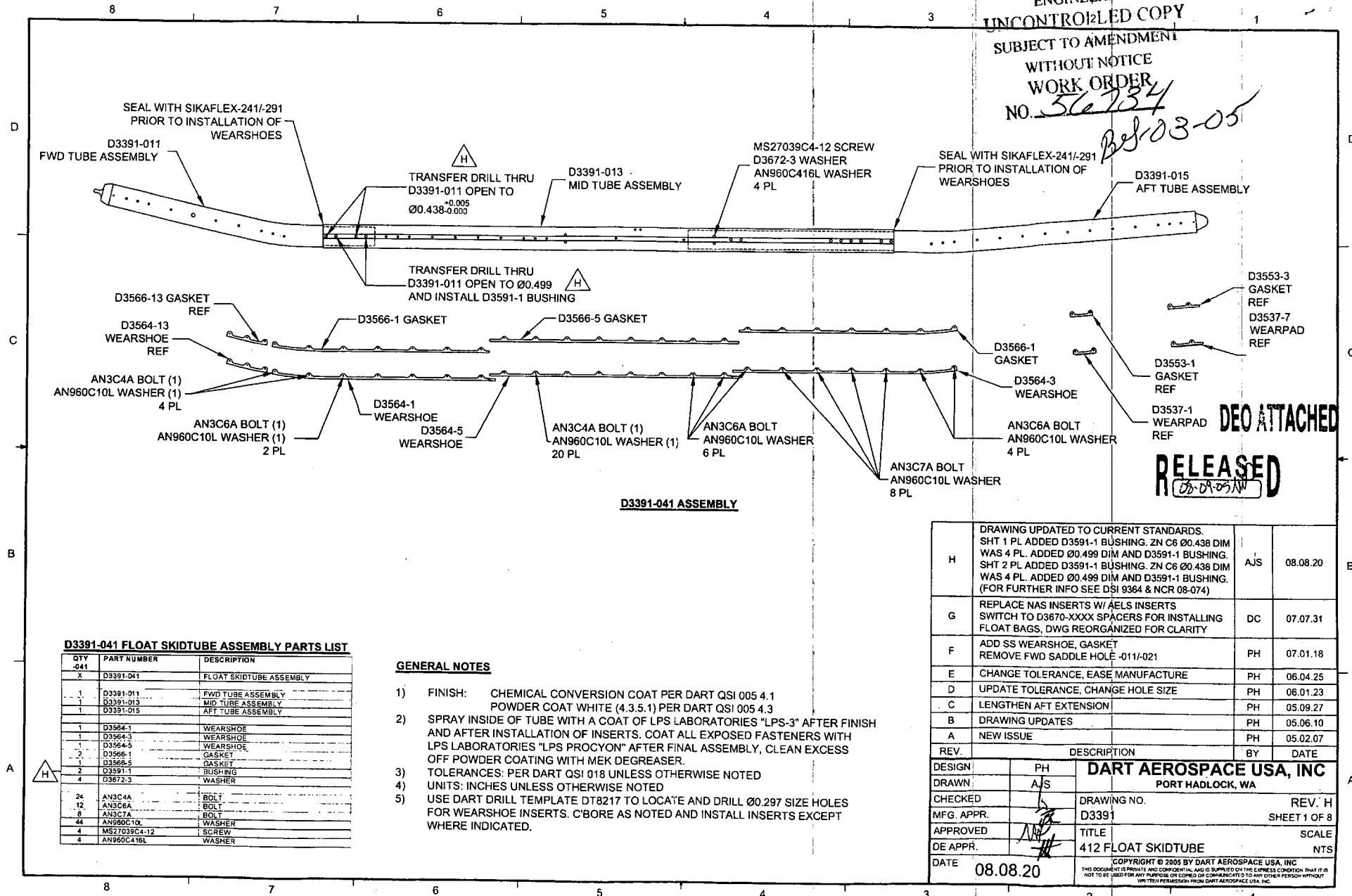
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY

SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 56734  
B-03-05






**D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST**

QTY	PART NUMBER	DESCRIPTION
1	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
2	D3566-5	GASKET
2	D3591-1	BUSHING
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

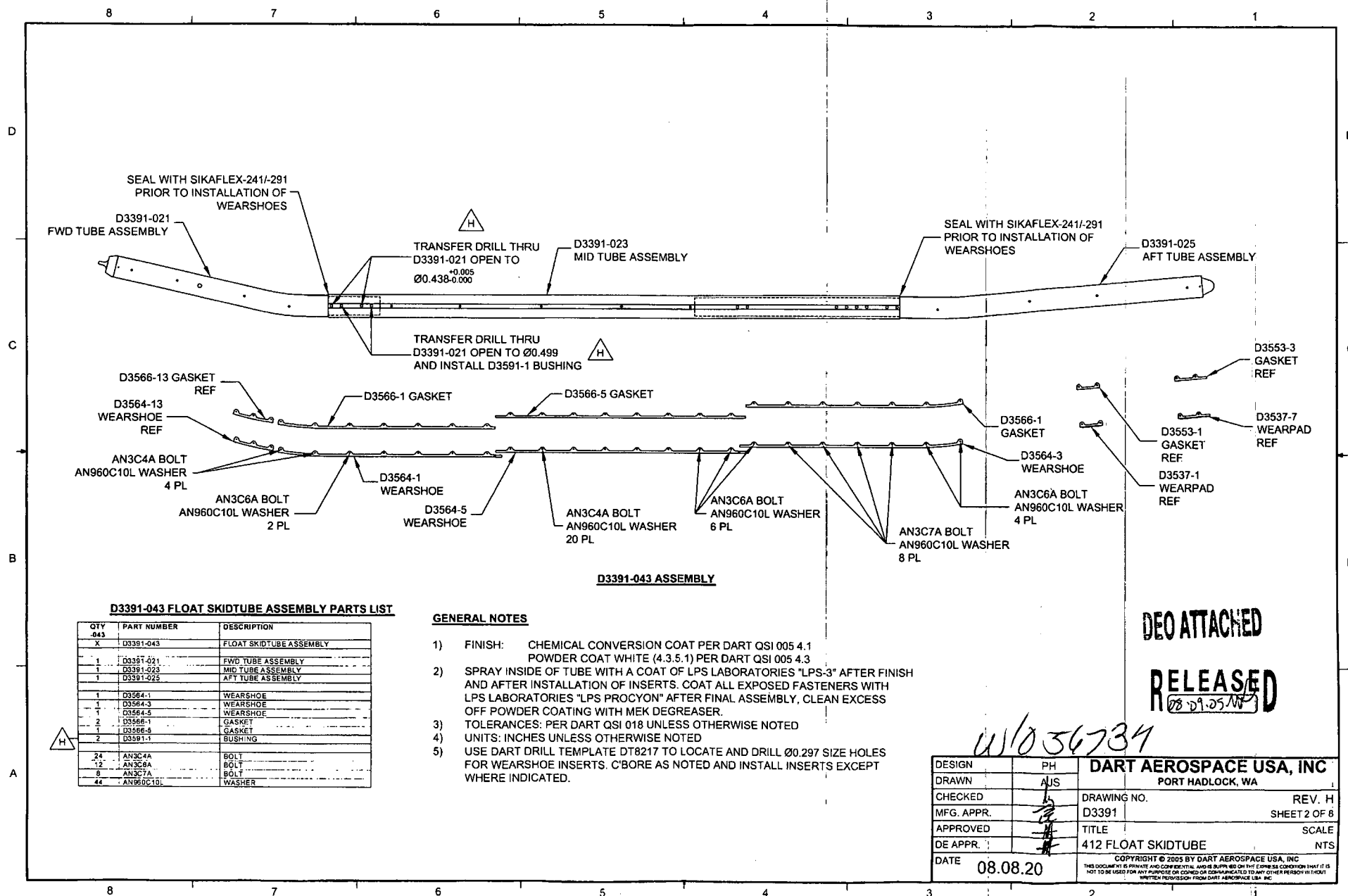
**GENERAL NOTES**

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. 2N C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. 2N C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC PORT HADLOCK, WA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 1 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

DEO ATTACHED

RELEASED  
08-08-20



**D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST**

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
2	D3566-5	GASKET
2	D3591-1	BUSHING
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

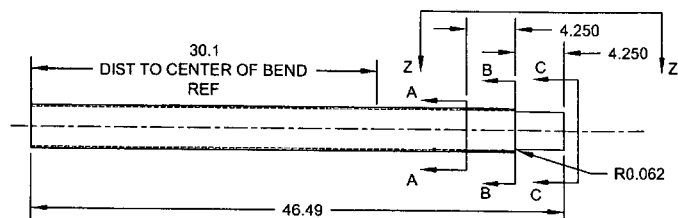
**GENERAL NOTES**

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

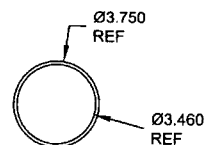
DEO ATTACHED

RELEASED  
08 09 25 1974

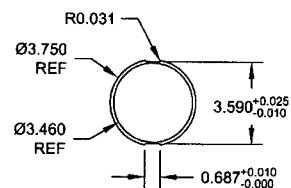
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 2 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMED OR DISSEMINATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



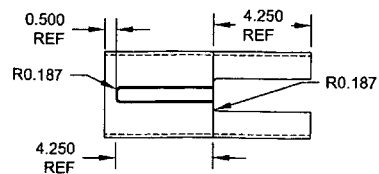
**D3391-1 CUTTING DETAIL**  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



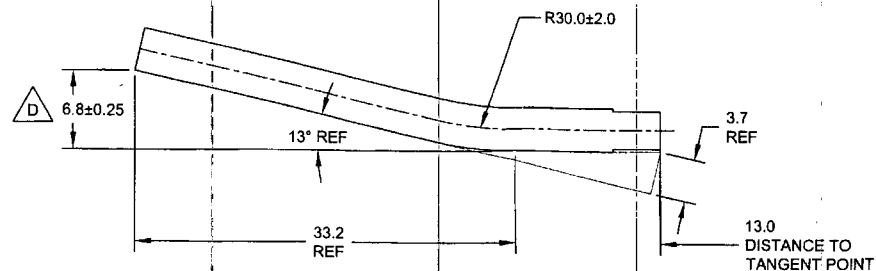
**SECTION A-A**  
SCALE 2X



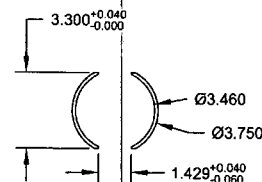
**SECTION B-B**  
SCALE 2X



**VIEW Z-Z**  
SCALE 2X



**D3391-011/-021 BENDING DETAIL**  
(MAKE FROM D3391-1)

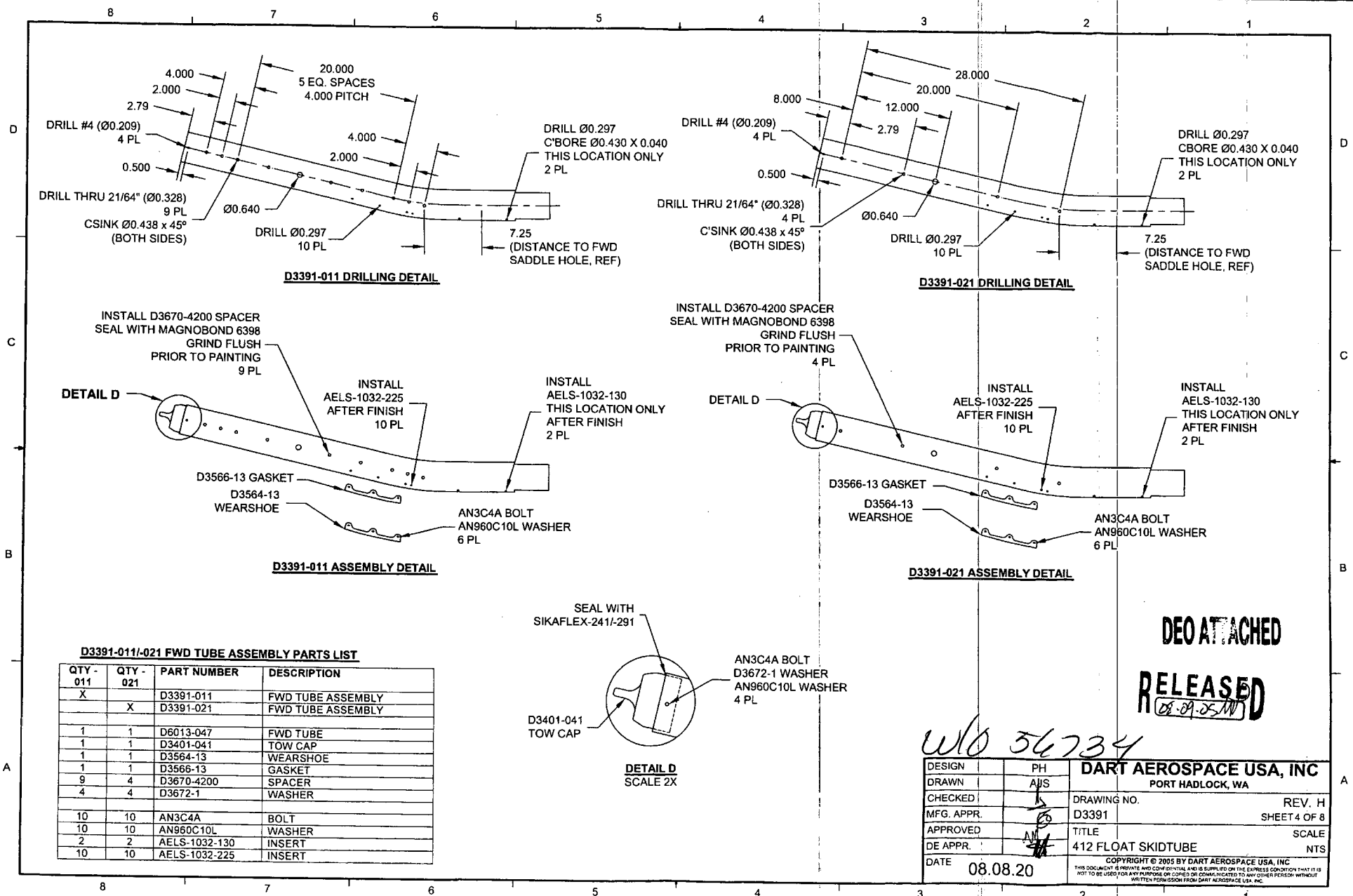


**SECTION C-C**  
SCALE 2X

DEO ATTACHED  
**RELEASED**  
8-2-05 NW

W056734

DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 3 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



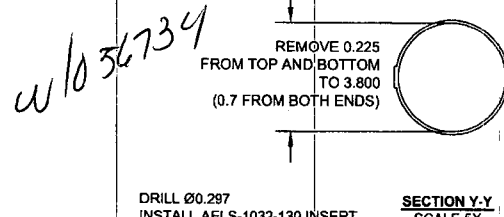
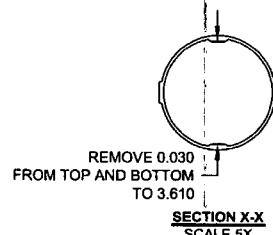
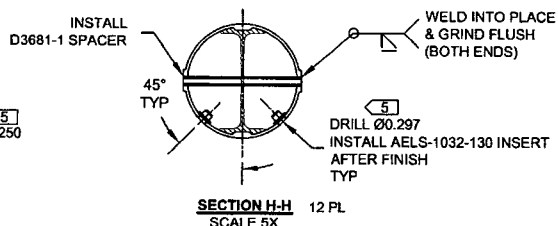
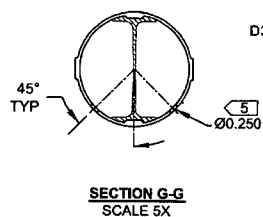
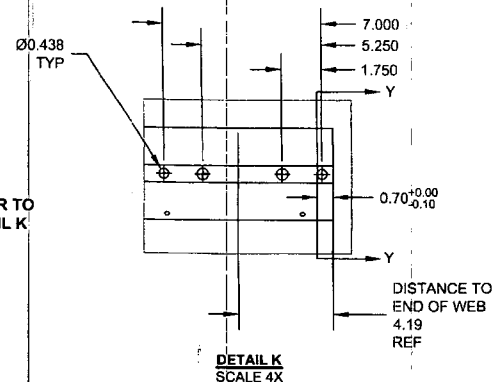
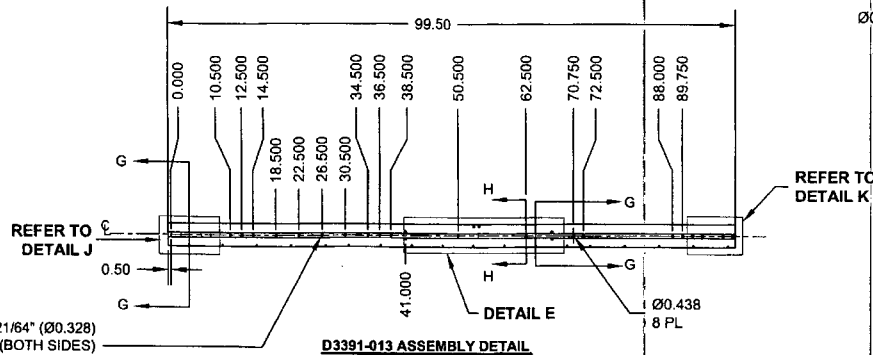
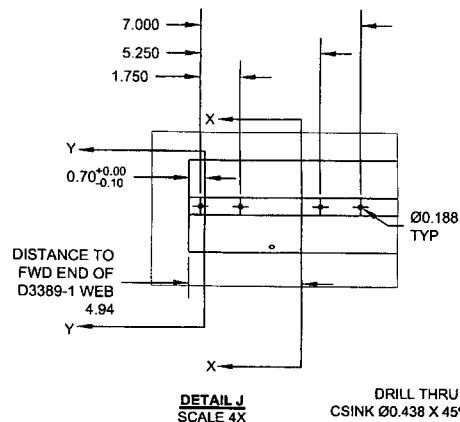
DEO ATTACHED

RELEASED  
08-09-25/10

W10 36734

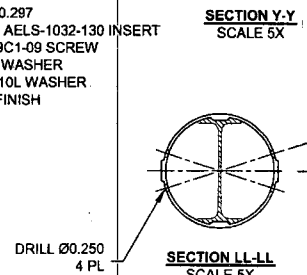
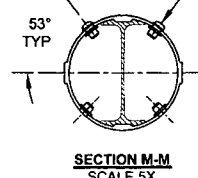
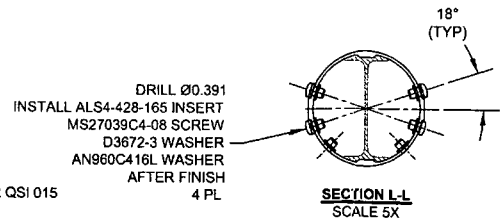
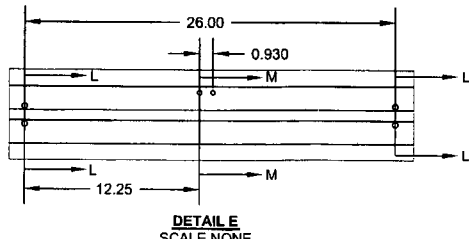
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 4 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	





**D3391-013 MID TUBE ASSEMBLY PARTS LIST**

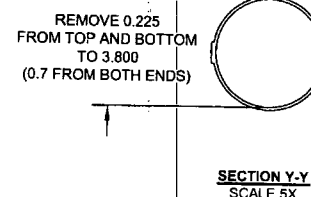
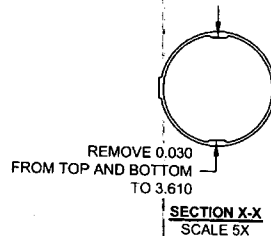
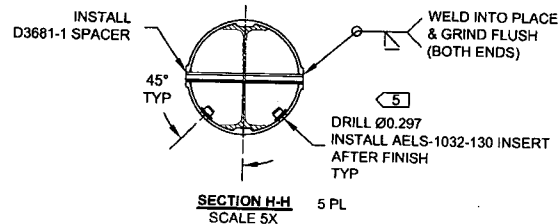
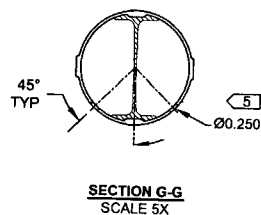
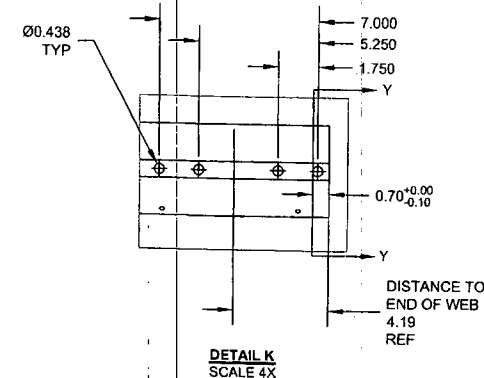
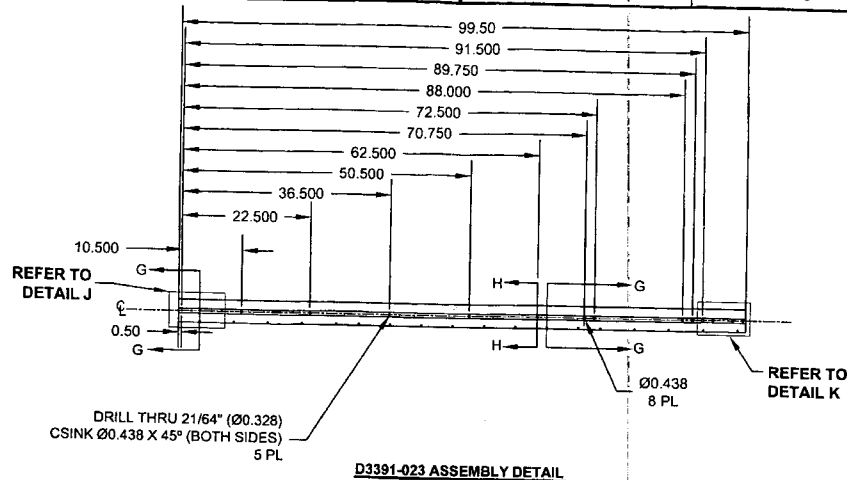
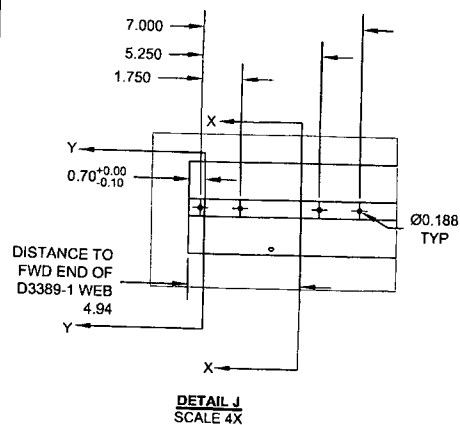
QTY	PART NUMBER	DESCRIPTION
-013		
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW



- D3391-013 MID TUBE ASSEMBLY**
- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
  - 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
  - 3) WELDING: PER DART QSI 004

DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AUS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV: H
MFG. APPR.		D3391	SHEET 5 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

DEO ATTACHED  
RELEASED



#### D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

#### D3391-023 MID TUBE ASSEMBLY

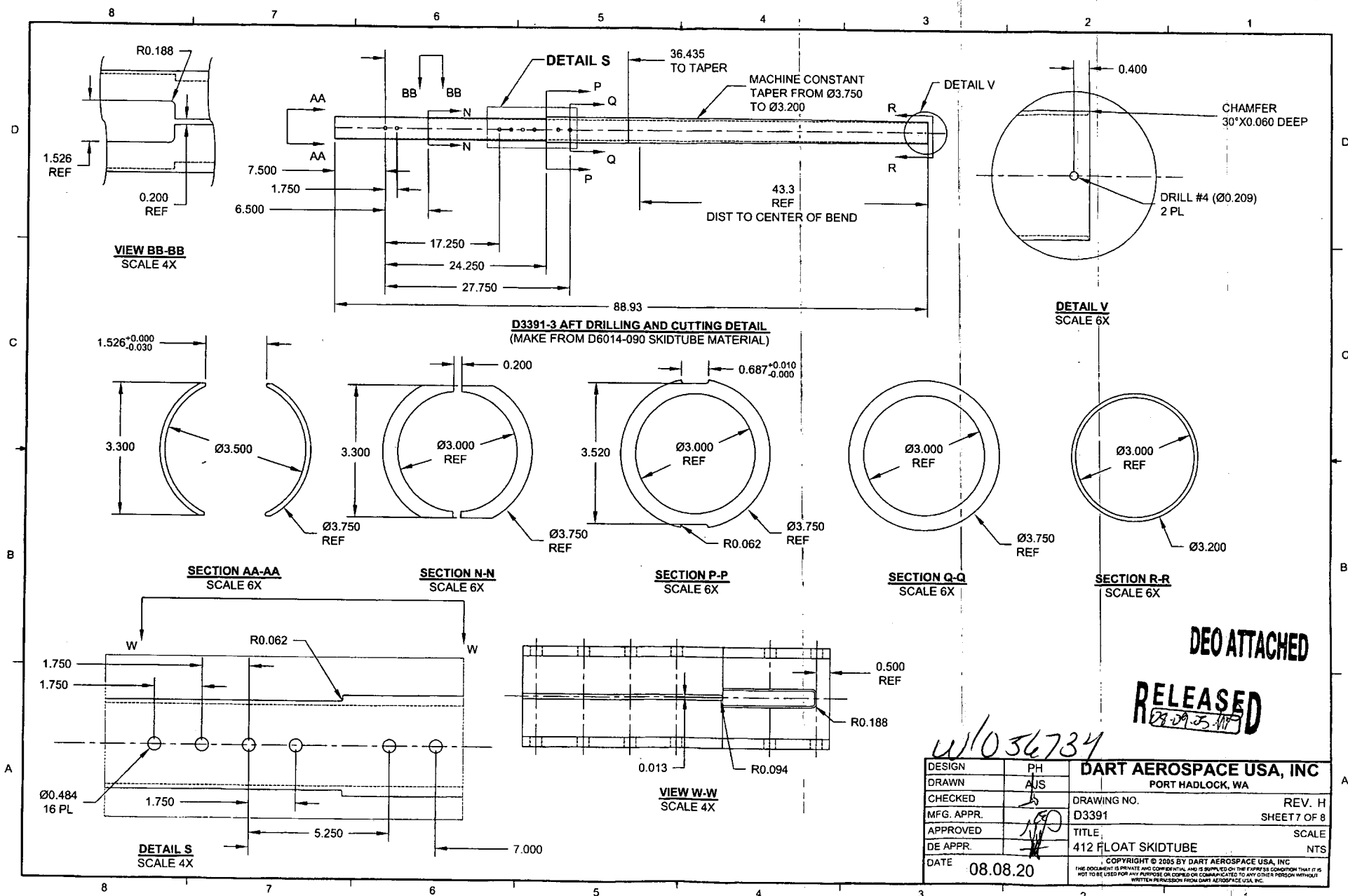
- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

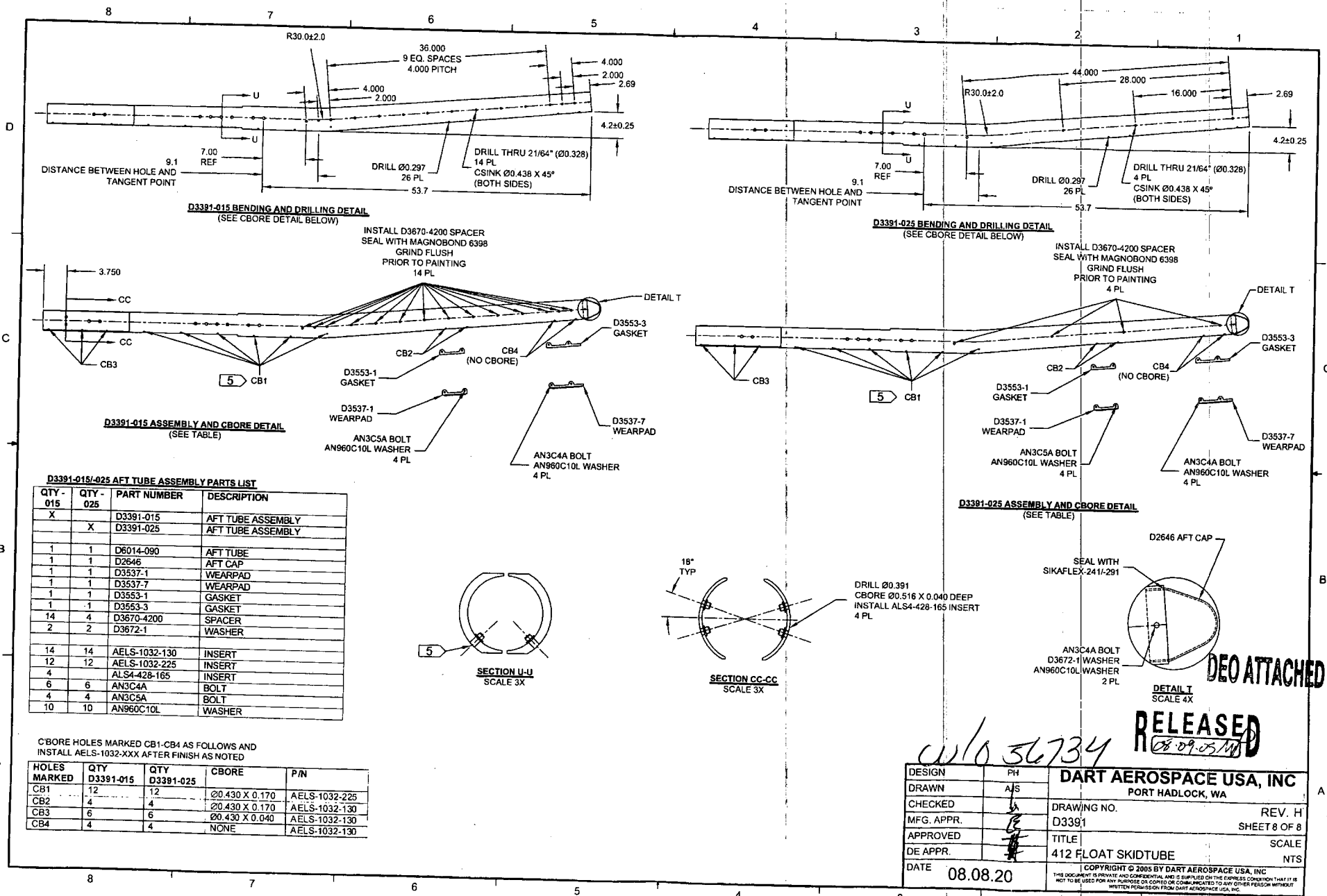
W1036734

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AS	PORT HADLOCK, WA	
CHECKED	AS	DRAWING NO.	REV. H
MFG. APPR.	AS	D3391	SHEET 6 OF 8
APPROVED	AS	TITLE	SCALE
DE APPR.	AS	412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC	

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

DEO ATTACHED  
RELEASED  
08-08-20





DRAWING NO. D3391	TITLE 412 FLOAT SKIDTUBE	REV. H	DART AEROSPACE USA, INC ENGINEERING ORDER		D.E.O. NO. D3391-H-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>CP</i>	CHECKED <i>h</i>	MFG. APPR. <i>AA</i>	APPROVED <i>MP</i>		DE APPR. <i>MP</i>		
DATE 09.09.23	DATE 06.09.24	DATE 09/09/25	DATE 09/09/30		DATE 09/09/30		

**PURPOSE:**

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

**CHANGE:**

AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

- 2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH~~  
~~AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH~~  
 LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS  
 OFF POWDER COATING WITH MEK DEGREASER.

**RELEASED**  
 2010-02-02  
*MP*

*W/036734*

DART AEROSPACE LTD		Work Order: 56734
Description: Float Skidtube (412)		Part Number: D3391-3
Inspection Dwg: D3391	Rev: H	Page 1 of 1

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
14.000	+/-0.010	14.000	✓			
3.500	+/-0.010	3.500	✓			
88.93	+/-0.030	88.950	✓			
44.995	+/-0.030	45.000	✓			
Ø3.200	+/-0.010	3.200	✓			
88.93	+/-0.030	88.950	✓			
Ø3.750	+/-0.010	3.750	✓			
30° x 160° chamfer	+/-0.010	30° x 160°	✓			

Measured by: am 10-03-23 Date: \_\_\_\_\_

Audited by: \_\_\_\_\_ Date: \_\_\_\_\_

HAAS Section						
1.526	+0.000/-0.030	1.510	✓			
7.500	+/-0.010	7.500	✓			
27.750	+/-0.010	27.750	✓			
31.750	+/-0.010	31.750	✓			
35.250	+/-0.010	35.250	✓			
3.300	+/-0.010	3.292	✓			
0.200	+/-0.010	.197	✓			
3.520	+/-0.010	3.519	✓			
0.687	+0.010/-0.000	.687	✓			
R0.062	+/-0.010	R.062	✓			
Ø0.484	+0.005/-0.001	Ø.489	✓			

Measured by: am Date: 10/03/29

Audited by: sp Date: 10/03/31

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-015/-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/EC/DD	
F	09.04.27	Dimensions updated per Rev H and NCR09-028	KJ/JLM	
G	09.11.16	Dimension 0.200 removed	KJ	